

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) :	Roland Neubert, Karin Vogel, Ulrich Salz, and Volker Rheinberger)	Examiner:
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Serial No. :	To Be Assigned)	Art Unit:
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For :	FILLER ON THE BASIS OF PARTICULATE COMPOSITE)	
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PRELIMINARY AMENDMENT

U. S. Patent and Trademark Office
Box 2327
Arlington, Virginia 22202
Box: Patent Application

Dear Sir:

Please amend the above-identified patent application as follows:

In the Claims:

Please replace claims 1-27 with amended claims 1-27 and add new claims 28-31 as follows:

1. (Amended) Particulate composite material, comprising an average particle size of 20 to 50 μm and containing at most 10 wt.-% particles with a size of < 10 μm .
2. (Amended) Particulate composite material according to claim 1, further comprising a maximum particle size of 70 μm .
3. (Amended) Particulate composite material according to claim 1, prepared by curing of a mixture of
 - (a) 10 to 80 wt.-% organic binder;
 - (b) 0.01 to 5 wt.-% polymerization initiator; and

(c) 20 to 90 wt.-% inorganic filler,
each relative to the total mass of the uncured mixture.

4. (Amended) Particulate composite material according to claim 3, wherein the inorganic filler comprises quartz, glass ceramic, glass powder or a mixture thereof.

5. (Amended) Particulate composite material according to claim 4, wherein said glass powder comprises barium glass powder or strontium glass powder.

6. (Amended) Particulate composite material according to claim 4, wherein said quartz, glass ceramic and/or glass powder has an average particle size of 0.4 to 1.5 μm .

7. (Amended) Particulate composite material according to claim 3, wherein said composite contains 10 to 50 wt.-% X-ray-opaque filler.

8. (Amended) Particulate composite material according to claim 7, further comprising ytterbium fluoride.

9. (Amended) Particulate composite material according to claim 3, further comprising precipitated mixed oxides.

10. (Amended) Composition, containing at least one polymerizable monomer and/or prepolymer, at least one polymerization initiator and at least one particulate composite material comprising an average particle size of 20 to 50 μm and containing at most 10 wt.-% particles with a size of < 10 μm .

11. (Amended) Composition according to claim 10, comprising

- (i) 10 to 80 wt.-% organic binder;
- (ii) 0.01 to 5 wt.-% polymerization initiator;
- (iii) 20 to 90 wt.-% particulate composite filler,

each relative to the total mass of the composition.

12. (Amended) Composition according to claim 10, further comprising an inorganic filler.

13. (Amended) Composition according to claim 12, wherein said inorganic filler comprises quartz, glass ceramic, glass powder, or a mixture thereof.

14. (Amended) Composition according to claim 13, wherein said glass powder comprises barium glass powder and/or strontium glass powder.

15. (Amended) Composition according to claim 13, wherein said quartz, glass ceramic and/or glass powder has an average particle size of 0.4 to 2 μm .

16. (Amended) Composition according to claim 12, comprising 25 to 70 wt.-% quartz, glass ceramic and/or glass powder.

17. (Amended) Composition according to claim 12, further comprising an X-ray-opaque filler.

18. (Amended) Composition according to claim 17, comprising ytterbium fluoride.

19. (Amended) Composition according to claim 17, comprising 1 to 10 wt.-% X-ray-opaque filler.

20. (Amended) Composition according to claim 12, further comprising a layered silicate.

21. (Amended) Composition according to claim 20, comprising 0.05 to 5 wt.-% layered silicate.

22. (Amended) Composition according to claim 10, further comprising precipitated mixed oxide.

23. (Amended) Composition according to claim 22, comprising $\text{SiO}_2/\text{ZrO}_2$ mixed oxide.

24. (Amended) Composition according to claim 22, wherein said mixed oxide has a particle size of 200 to 300 nm.

25. (Amended) Composition according to claim 22, comprising 20 to 70 wt.-% mixed oxide.

26. (Amended) Composition according to claim 10, further comprising 0.01 to 2 wt.-% additives.

27. (Amended) The composition according to claim 10, comprising a tooth-filling material, material for inlays or onlays, tooth cement, facing material for crowns and bridges, or material for false teeth.

28. (New) Particulate composite material according to claim 3, wherein the organic binder is 10 to 30 wt.-%, the polymerization initiator is 0.5 to 2 wt.-%, and the inorganic filler is 60 to 88 wt.-%.

29. (New) Particulate composite material according to claim 6, wherein said average particle size is 0.7 to 1.0 μm .

30. (New) Particulate composite material according to claim 7, wherein said composite contains 20 to 30 wt.-% X-ray-opaque filler.

31. (New) Composition according to claim 16, comprising 30 to 50 wt.-% quartz, glass ceramic and/or glass powder.

REMARKS

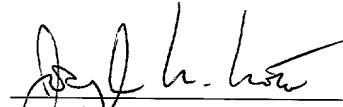
Entry of the foregoing in advance of the initial Office Action is respectfully requested.

By the present preliminary amendment, claims 1-27 have been amended and new claims 28-31 have been added to conform the foreign language originating text to U.S. practice. Pursuant to 37 CFR § 1.121, attached as Appendix A is a Version of the Claims With Markings to Show Changes Made.

Early allowance of the pending claims is hereby earnestly solicited.

Respectfully submitted,

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Appendix A

Version of the Claims With Markings to Show Changes Made

In reference to the amendments made herein to claims 1-27, additions appear as underlined text, while deletions appear as bracketed text, as indicated below:

In The Claims:

1. (Amended) Particulate composite material, [characterized in that it has] comprising an average particle size of 20 to 50 μm and [contains] containing at most 10 wt.-% particles with a size of $< 10 \mu\text{m}$.

2. (Amended) Particulate composite material according to claim 1, [characterized in that it has] further comprising a maximum particle size of 70 μm .

3. (Amended) Particulate composite material according to claim 1 [or 2], prepared by curing of a mixture of

- (a) 10 to 80 wt.-%[, preferably 10 to 30 wt.-%] organic binder;
- (b) 0.01 to 5 wt.-%[, preferably 0.5 to 2 wt.-%] polymerization initiator; and
- (c) 20 to 90 wt.-%[, preferably 60 to 88 wt.-%] inorganic filler,

each relative to the total mass of the uncured mixture.

4. (Amended) Particulate composite material according to claim 3, [characterized in that it contains as] wherein the inorganic filler comprises quartz, glass ceramic, glass powder or a mixture [of these] thereof.

5. (Amended) Particulate composite material according to claim 4, [characterized in that it contains] wherein said glass powder[, preferably] comprises barium glass powder [and/or] or strontium glass powder.

6. (Amended) Particulate composite material according to [one of] claim[s] 4 [to 5], wherein said [characterized in that the] quartz, glass ceramic and/or glass powder has an average particle size of 0.4 to 1.5 μm [, preferably 0.7 to 1.0 μm].

7. (Amended) Particulate composite material according to [one of] claim[s] 3 [to 6], wherein said composite [characterized in that it] contains 10 to 50 wt.-%[, preferably 20 to 30 wt.-%] X-ray-opaque filler.

8. (Amended) Particulate composite material according to claim 7, further comprising [characterized in that it contains] ytterbium fluoride.

9. (Amended) Particulate composite material according to [one of] claim[s] 3 [to 8], further comprising [characterized in that it contains] precipitated mixed oxides.

10. (Amended) Composition, containing at least one polymerizable monomer and/or prepolymer, at least one polymerization initiator and at least one particulate composite material comprising an average particle size of 20 to 50 μm and containing at most 10 wt.-% particles with a size of $< 10 \mu\text{m}$ [according to one of the previous claims].

11. (Amended) Composition according to claim 10, comprising [characterized in that it contains]

- (i) 10 to 80 wt.-% organic binder;
- (ii) 0.01 to 5 wt.-% polymerization initiator;
- (iii) 20 to 90 wt.-% particulate composite filler, [according to one of claims 1 to 9],

each relative to the total mass of the composition.

12. (Amended) Composition according to claim 10, further comprising an [or 11, characterized in that it contains] inorganic filler [as a further component].

13. (Amended) Composition according to claim 12, wherein said [characterized in that it contains as] inorganic filler comprises quartz, glass ceramic, glass powder, or a mixture thereof [of these].

14. (Amended) Composition according to claim 13, wherein said [characterized in that it contains] glass powder[,] comprises [preferably] barium glass powder and/or strontium glass powder.

15. (Amended) Composition according to claim 13, wherein said [or 14, characterized in that the] quartz, glass ceramic and/or glass powder has an average particle size of 0.4 to 2 μm .
16. (Amended) Composition according to [one of] claim[s] 12, comprising [to 15, characterized in that it contains] 25 to 70 wt.-%[, preferably 30 to 50 wt.-%] quartz, glass ceramic and/or glass powder.
17. (Amended) Composition according to [one of] claim[s] 12, further comprising an [to 16, characterized in that it contains] X-ray-opaque filler [as a further component].
18. (Amended) Composition according to claim 17, comprising [characterized in that it contains] ytterbium fluoride.
19. (Amended) Composition according to [one of] claim[s] 17, comprising [to 18, characterized in that it contains] 1 to 10 wt.-% X-ray-opaque filler.
20. (Amended) Composition according to [one of] claim[s] 12, further comprising [to 19, characterized in that it contains] a layered silicate [as a further component].
21. (Amended) Composition according to claim 20, comprising [characterized in that it contains] 0.05 to 5 wt.-% layered silicate.
22. (Amended) Composition according to [one of] claim[s] 10, further comprising [to 21, characterized in that it additionally contains] precipitated mixed oxide.
23. (Amended) Composition according to claim 22, comprising [characterized in that it contains] $\text{SiO}_2/\text{ZrO}_2$ mixed oxide.
24. (Amended) Composition according to [one of] claim[s] 22, wherein said [to 23, characterized in that the] mixed oxide has a particle size of 200 to 300 nm.
25. (Amended) Composition according to [one of] claim[s] 22, comprising [to 24, characterized in that it contains] 20 to 70 wt.-% mixed oxide.

27. (Amended) The [Use of a] composition according to claim[s] 10, [to 26 as dental material, in particular as] comprising a tooth-filling material, material for inlays or onlays, tooth cement, facing material for crowns and bridges, or material for false teeth.